KHAYKIN, S. E.

"In Memory of Academician A. A. Andronov," Radio, No.2, pp 12-13, 1953.

Andronov was an Active Member, AS USSR, Professor at Gor'kiy State U, where he initiated the field of radio physics, and a Deputy of the Supreme Soviet USSR. He was associated with L. I. Mandel'shtam and N.D.Papaleksi and helped in developing the nonlinear theory of oscillations and the theory of vacuum-tube oscillators. He solved many problems in automatic control, particularly automatic pilots for aeroplanes.

253T85

USSR/Physics FD 427

Card 1/1 Pub. 147-13/16

Author : Lebedev, S. V., and Khaykin, S. E.

Title : Certain anomalies in the behavior of metals heated by impulses of heavy-density current

Periodical : Zhur. eksp. i teor. fiz. 26, 629-639, May 1954

Abstract : Investigate the dependence of the electrical conductivity of a metal conductor upon the energy entering it for a current density of about one million A/cm^2. Observe here the anomalous course of this dependence, which points to an unusual state of metal itself.

Institution : Physics Institute imeni P. N. Lebedev, Acad Sci USSR

Submitted : July 13, 1953

KHAYKIN, Semen Emmanuilovich, doktor fiziko-matematicheskikh nauk, professor; KIPNIS, S.Ye., redaktor; ISLENT'YEVA, P.G., tekhnicheskiy redaktor

[Radio astronomy] Radioastronomiia. Moskva, Izd-vo "Znanie," 1954. 62 p. (Vsesoiuznoe obshchestvo po rasprostraneniiu politicheskikh i nauchnykh znanii, Ser.3, nos. 38-39) (MLRA 7:10)
(Radio astronomy)

USSR/Physics - Electron emission FD-720

Card 1/1 : Pub 146-8/18

Author : Lebedev, S. V., and Khaykin, S. E.

Title : Anomalies of electron emission from tungsten heated by an impulse of high-density current

Periodical : Zhur. eksp. i teor. fiz., 26, 723-735, Jun 1954

Abstract : Investigate electron emission of tungsten that is heated by an impulse of high-density current. Under such heating the emmission exceeded the usual tungsten emission at melting temperature. One reference.

Institution : Physics Institute imeni Lebedev, Acad Sci. USSR

Submitted : July 13, 1953

KHAYKIN, S. Ye. and TROITSKIY, V. S.

"Radioemission from the Moon and the Nature of Its Surface," paper submitted at the International Astronomical Union Radio Astronomy Symposium, Jodrell Bank, UK, August 1955

A-40421 - II

KHAYKIN,S., professor

How to observe solar radiation. Radio no.9:52-55 S'55. (MLRA 8:11)
(Solar radiation)

Title : Radio-observation of the sun

USSR/Electronics-Radioastronomy FD-2440

Card 1/1 Pub 90-2/11

Author : Khaykin, S. Ye., Active Member, VNORiE

Title : Radioastronomy

Periodical : Radiotekhnika, 10, 7-25, Apr 55

Abstract : The origin of cosmic radiation, the types of radiations from cosmic bodies and interstellar gases, and the basic radioastronomical methods for detection of these radiations are treated. The utilization of radiotelescopes for cosmic radiation observations, the types of antennas most effective for these observations, and various methods of improving the resolving power are discussed. The radiointerferometer is one type of a very efficient antenna array operating on the principle similar to diffraction grating. Detection of interstellar hydrogen radiation with a frequency radio meter by V. V. Vitkevich is mentioned. Reduction of the circuit thermal noises and increasing the time constant of the radio output are the requirements imposed by the radioastronomy upon the radio technology. 7 USSR references

Institution: All-Union Scientific and Technical Society of Radio Engineering and Electric Communications imeni A. S. Popov (VNORiE)

Submitted : January 13, 1955

GOL'D, B.V.; KHAYKIN, S.E. Professor, retsenzent; AFANAS'YEV, L.L. kandidat tekhnicheskikh nauk, retsenzent; BROKSH, V.V., inzhener redaktor; TIKHONOV, A.Ye., tekhnicheskiy redaktor

[How an automobile works] Kak rabotaet avtomobil'. Izd.2-e ispr. i dop. Moskva, Gos.nauchno-tekhn.izd-vo mashinostroit. lit-ry, 1955. 217 p. (MLRA 8:10)
(Automobiles)

KHAYKIN, S. E. Doctor of Physical and Mathematical Sciences

"Radio astronomy" a chapter in the book Radio and Electronics and Their Technical Applications, by A. I. Berg, et al. Moscow 1956.

Summary of chapter 1071291

KHAYKIN, S. E., Prof.

"Original Design of a New Large Reflector for a Radiotelescope," a report presented at the Conference of Commission on Astronomical Instruments Construction of the Astronomical Council, AS USSR, 10-12 Feb 56.

Sum. No. 1047, 31 Aug 56

KHAYKIN, S.E.

Category : USSR/Radiophysics - Application of radiophysical methods I-12

Abs Jour : Ref Zhur - Fizika, No 1, 1957, No 1969

Author : Khaykin, S.E.
Title : Radio-Astronomical Instruments

Orig Pub : Tr. 5-go soveshchaniya po vopr. kosmogonii 1955, M., AN SSSR, 1956, 9-13

Abstract : Comparison of radio-astronomical instruments with astronomical ones makes it possible to establish the features they ave in common. The "optical systems" of radio telescopes, like those of ordinary telescopes, are divided into two classes -- refractors and reflectors. In radio-refractors, as in optical refractors, there is a limit beyond which there is no sense in increasing the size of the radiotelescope. Increasing the limiting dimensions of radio refractors, by using coherent transformation or straight amplification directly at the individual antennas, involves difficulties in observing the necessary constancy of the phase relationships. In addition , radio refractors are narrow-band devices (in analogy with chromatic aberration in refractors), while radio reflectors insure reception over wide frequency ranges. On the other hand, it is easy to eliminate inclined-beam aberrations in refractors. The optical axis of radio refractors can therefore be rotated

Card : 1/2

Category : USSR/Radiophysics - Application of radiophysical methods I-12

Abs Jour : Ref Zhur - Fizika, No 1, 1957, No 1969

electrically without rotating the refractor itself, but reflectors must be rotated to observe sources that have different declinations.

Card : 2/2

KHAYKIN, S.E. I-12

Category : USSR/Radiophysics - Application of radiophysical methods I-12

Abs Jour : Ref Zhur - Fizika, No 1, 1957, No 1919

Author : Khaykin, S.E., Yegorova, T.M., Korol'kov, D.V.
Title : Radio Telescope Output Stage with a Time Constant on the Order of Several Hours.

Orig Pub : Tr. 5-go soveshchaniya po vopr. kosmogonii. 1955, M., AN SSSR, 1956, 131-135, diskus. 136-137

Abstract : To insure stable operation of the output part of a radio telescope during the accumulation time, the narrow-band amplifier and the synchronous detector were replaced by a system comprising a vibration galvanometer, tuned to the modulation frequency, and a bridge containing two photo-resistors and a d-c galvanometer, connected in the diagonal. The reference voltage is applied to the second diagonal of the bridge. The d-c component of the current in the bridge diagonal appears only when the pointer of the vibration galvanometer alternatley illuminates the photo-resistors of the bridge in synchronism with the standard voltage. Prolonged accumulation is effected photographically. The d-c galvanometer scale is replaced by a photographic plate. In the absence of a signal, the plate becomes blackened by the noise, and the maximum blackening coincides with the zero position of the pointer of the output galvanometer. In the presence of a signal the maximum blackening will shift

Card : 1/2

Card : 2/2

KHAYKIN, S.E.

I-12

Category : USSR/Radiophysics - Application of radiophysical methods

Abs Jour : Ref Zhur - Fizika, No 1, 1957, No 1992

Author : Kaydanovskiy, N.L., Turusbekov, M.T., Khaykin. S.E.
Title : Thermal Radio-Waves from the Moon.

Orig Pub : Tr. 5-go soveshchaniya po vopr. kosmogonii. 1955, M., AN SSSR, 1956, 347-354, diskus 354-355

Abstract : Discription of a method for experimental determination of the dependence of the moon's radio brightness on its phase, using the displacement of the "center of gravity of the radiation " along the lunar equator; this method does not require the antennas to have a small directivity compared with the angular dimensions of the moon. Results are reported on the investigation of 2.3 and 10 cm radio waves from the moon, performed with this method. The 3.2 cm observations were made with a 4-meter radio telescope and a modulation radiometer of the tuning-fork type, insuring a sensitivity of 2° relative to the antenna temperature. The 10-cm waves were measured with a reflector 7.5 m in diameter and with a disk-type radiometer having a sensitivity of 5°. The sensitivity was determined with the aid of a partly-absorbing plate, immersed in the waveguide of the radio telescope, which in turn was aimed at the zenith or at the measured source of radio waves.

C Card : 1/2

Category : USSR/Radiophysics - Application of Radiophysical Methods I-12

Abs Jour : Ref Zhur - Fizika, No 2, 1957, No 4622

Author : Khaykin, S.E.
Title : Radio Astronomy and the Study of the Universe.

Orig Pub : Priroda, 1956, No 8, 5-14

Abstract : A detailed examination of the difference between the optical and radio-astronomical observations, which lead to discoveries of principally new capabilities of studying the universe.

Card : 1/1

KHAYKIN, S.E.

KAYDANOVSKIY, N.L.; KOROL'KOV, D.V.; SOBOLEVA, N.S.; KHAYKIN, S.E.

Polarization of radioemission from sun spots as observed on the 3, 2 cm wave. Dokl.AN SSSR 112 no.6:1012-1015 F '57.
(MLRA 10:5)

1.Glavnaya astronomicheskaya observatoriya Akademii nauk SSSR, Pulkovo. Predstavleno akademikom M.A. Leontovichem.
(Sun spots) (Radio astronomy)

KHAYKIN, S. E. and KAYDANOVSKIY, N. L.

"A New Radiotelescope of High Resolving Power."

paper presented at Symposium on Radio Astronomy, Paris, 30 Jul - 6 Aug 58.

KHAYKIN, S.E., KALASHNIKOV, A.G., ISAKOVICH, M.A., LEONTOVICH, M.A., SAKHAROV, D.I.; LANDSBERG, G.S., akad., red.; STAROKADOMSKAYA, Ye.L., red.; MURASHOVA, N.Ya., tekhn. red.

[Elementary textbook in physics] Elementarnyy uchebnik fiziki. Izd. 2., Moskva, Gos. izd-vo fiziko-matematicheskoi lit-ry. Vol. 1 [Mechanics, heat, and molecular physics] Mekhanika, teplota, molekuliarnaia fizika. 1958. 523 p. Vol. 2.[Electricity and magnetism] Elektrichestvo i magnetism. 1958. 448 p. (MIRA 11:10)

(Physics)

KHAYKIN, S. E.

S. E. KHAYKIN, N. L. Kaidanovskiy, "Requirements for radio telescope antennas." Scientific Session Devoted to "Radio Day", May 1958, Trudrezervizdat, Moscow, 9 Sep. 58

Requirements for radio telescope antennas are analyzed from the viewpoint of one of the most important problems of radio astronomy, the detection of the greatest possible number of discrete sources of radio emission, the determination of their coordinates and emission flux, the investigation of the brightness distribution of this emission in the case of sufficiently extended sources. Requirements on radio telescopes to solve other radio astronomy problems can be diminished somewhat but these changes are insighificant in the majority of cases.

KHAYKIN, S. E.

B. V. Braude, N. A. Yespkina, N. L. Kaydanovskiy, S. E. KHAYKIN, "Investigation of the radio telescope with the variable reflector profile of the Main Astronomical Observatory An USSR." Scientific Session Devoted to "Radio Day", May 1958, Trudreservizdat, Moscow, 9 Sep. 58

Results of a theoretical and experimental investigation of the directivity pattern and gain of a new radio telescope with high resolving power (pattern width at a 3 cm wavelength is of the order of one angular minute) proposed and realized by S. E. Khaikin and N. L. Kaidanovskii, are presented.

Specific peculiarities of the antenna system are analyzed from the viewpoint of forming the directivity pattern, in particular, the depandence of the pattern width in the vertical plane on the elevation.

A method of measuring the directivity characteristics and the gain at distances close to the antenna and by means of solar radio emission is described.

The peculiarity in the antenna reflector construction permits the influence of inaccuracies in the reflector surface on the basic characteristics of the antenna system to be investigated experimentally. Results are presented of a comparison of the appropriate measurements with computations.

The reasoning on the possibility of constructing a radio telescope with a directivity pattern width of the order of parts of an angular minute at microwave frequencies is presented.

SHASKOL'SKAYA, Marianna Petrovna; EL'TSIN, Iosif Abramovich; KHAYKIN, S.E., prof., red.; ZHABOTINSKIY, Ye.Ye., red.; KRYUCHKOVA, V.N., tekhn.red.

[Collection of selected problems in physics] Sbornik izbrannykh zadach po fizike. Pod red. S.E.Khaikina. Moskva, Gos.izd-vo fiziko-matem.lit-ry, 1959. 207 p. (MIRA 12:11)
(Physics--Problems, exercises, etc.)

24(3) PHASE I BOOK EXPLOITATION SOV/2744

Khaykin, Semen Emmanuilovich

Elektromagnitnyye kolebaniya i volny (Electromagnetic Oscillations and Waves) Moscow, Gosenergoizdat, 1959. 255 p. (Series: Massovaya radiobiblioteka, vyp. 325) 40,000 copies printed.

Ed.: I.P. Zherebtsov; Tech. Ed.: G.I. Matveyev; Editorial Board: A.I. Berg, F.I. Burdeynyy, V.A. Burlyand, V.I. Vaneyev, Ye.N. Genishta, I.S. Dzhigit, A.M. Kanayeva, E.T. Krenkel', A.A. Kulikovskiy, A.D. Smirnov, F.I. Tarasov, and V.I. Shamshur.

PURPOSE: The book is intended for readers having elementary knowledge of physics and mathematics. It may serve as an introduction for a study of the fundamentals of radio engineering.

COVERAGE: The author investigates in detail the formation and propagation of electromagnetic waves in space and electric oscillations in circuits and transmission lines in the concrete conditions under which these phenomena take place in the processes of radio transmission and radio reception. The

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Electromagnetic (Cont.) SOV/2744

author does not enter into the details of amplification, modulation and rectification and deals with these problems only briefly as background material. Specific problems of microwave propagation in wave guides, microwave antennas, etc, are not discussed. Only basic physical phenomena important from the point of view of their practical applicability are presented. The aim of this book is to help the radio amateur to understand the nature of the physical phenomena he encounters in his daily practice. No personalities are mentioned. There are no references.

TABLE OF CONTENTS:

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KHAYKIN, S.E.

16(1); 24(1) PHASE I BOOK EXPLOITATION SOV/2627

Andronov, Aleksandr Aleksandrovich, Aleksandr Adol'fovich Vitt, and Semen Emmanuilovich Khaykin

Teoriya kolebaniy (Theory of Vibrations) 2nd ed., rev. and enl. Moscow, Fizmatgiz, 1959. 915 p. 20,000 copies printed.

Rev. and enl. by N.A. Zheleztsov; Ed.: V.A. Grigorova; Tech. Ed.: S.S. Gavrilov.

PURPOSE: This book is intended for scientific, engineering, and technical workers who encounter various vibrational processes in their work.

COVERAGE: The book systematically presents a large amount of material on the theory of nonlinear vibrations of autonomous nonlinear systems with one degree of freedom, which encompasses a large number of vibrational systems encountered in engineering practice. The fundamental aim of the book is not the solution of a large number of practical problems but the explanation of the basic propositions and methods adequate for the field of nonlinear vibrations in general. The presentation of the material is based on the works of Poincaré and Lyapunov. So-called qualitative integration is discussed in detail.

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Theory of Vibrations SOV/2627

All these problems are studied with respect to the simplest case of a system with one degree of freedom without external force, a so-called autonomous system. Ye.A. Leontovich-Andronova assisted in revising the first edition. The Preface to the second edition was written by S.E. Khaykin. There are 201 references: 130 Soviet, 27 German, 26 French, 17 English, and 1 Italian.

TABLE OF CONTENTS:

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of resolving power in the equipment. Large telescopes are needed to give high resolution, and these should work at the shortest possible wavelengths. The decimetre-centimetre region is the best from all points of view. Most of the known radio sources show a falling intensity in this region (variation roughly as $\lambda^{0.8}$). However, the observation conditions improve rapidly as this region is entered, because the general thermal background of the galaxy falls rapidly. In principle, the shorter the wavelength the higher the sensitivity attainable (the practical sensitivity is limited by the effective temperature of the internal noise sources in the receiver, as well as by the incoming thermal radiation. Modern low-noise masers already provide sensitivities in this wavelength range that are many times larger than those available at metre wavelengths); the gain is more than sufficient to offset the fall in the radiation flux. Hence almost all the sources that are detectable at long wavelengths can still be detected at these short wavelengths; so can sources whose intensities vary little with wavelength, and which are undetectable at longer

A New Radio Telescope of High Resolving Power

wavelengths because of lack of sensitivity. Attempts at making large parabolic reflectors suitable for use at short wavelengths have been frustrated by the following difficulty. (Large telescopes for centimetre waves are best built with reflectors. It is difficult to design for large areas when centimetre waves are to be used in, say, radio interferometers). The reflecting surface must not deviate from the correct shape by more than 0.1 λ. Thus the relative accuracy (ratio of permitted deviation to diameter) increases as the wavelength is reduced. No existing radio telescope has a relative accuracy better than 1 in 10^4, and there is no reason to expect any substantial improvement. Now the diameter should not greatly exceed 1000 λ; the directional pattern must show a divergence not substantially less than 3' (because the angle to half power is about λ/D radians). The resolving power can be increased only if some new principle is used to produce large reflectors of relative accuracy much better than 1 in 10^4. The present authors proposed one such principle in 1952, which principle has been utilised at the Main Astronomical Observatory. The reflector

A New Radio Telescope of High Resolving Power

is split up into many separate strips, each of which is set to produce the desired form of surface. The number of strips increases with the size of the reflector; the only increase in accuracy demanded falls on the mutual positioning of the strips and not on the form of each strip. The reflector strips can be adjusted by geodetic methods to a relative accuracy of about 1 in 10^6, i.e. to an accuracy much higher than that accessible with an integral reflector. The strips have to be set on the ground, and so the size can be increased greatly only in the horizontal direction. Hence the viewing angle will be narrow only in horizontal direction ('knife-edge pattern'). However, Bracewell (Ref 1) and Pariyskiy have shown that this type of pattern can usually be used to give the high resolution in both coordinates, if observations are made at different azimuths (direct and oblique to the direction of rise.) The curvature of the reflecting surface must vary with the azimuth and right elevation. This variation is possible with a given set of strips only if the strips are flat. The surface can be built up from separate flat strips in the

A New Radio Telescope of High Resolving Power

following way. Consider a paraboloid of rotation whose focus lies fixed at a certain height above the ground. This paraboloid can be turned about the focus F to view different directions (Fig 1). The paraboloid meets the horizontal plane MN through the focus in an ellipse (Fig 2), whose equation is

$$\rho = P/(1 + \cos \alpha \cos \varphi) \qquad (1)$$

where ρ is the distance from the focus to a point on the ellipse, P is the parameter of the initial paraboloid, and α is the viewing angle (to the horizontal). (The eccentricity varies from 1 to 0, and ρ from P/2 to P, as α changes from 0 to 90°). If the strips are placed very close together along this ellipse, an incident plane wave will be transformed to a convergent cylindrical one, whose axis passes through the focus. The horizontal size ℓ of a strip must then be small and such that the path difference between the centre and edge of a strip is much less than the shortest wave-

Card 5/11 length (λ_{min}) to be received; the vertical length h must be large in order to minimize diffraction at the

longest wavelength (λ_{max}) to be received. Then all rays reflected from points in the plane MN will arrive in the same phase at the focus, and waves reflected in any other plane will arrive at a vertical line passing through the focus in that same phase. The surface thus transforms a plane wave into a cylindrical one that propagates horizontally and that converges to a vertical line passing through the focus. A second reflector (a parabolic cylinder) placed near the focus with its axis horizontal, and with its focus placed at the focus of the first reflector, will transform the cylindrical wave into a convergent spherical one. Thus the incident plane wave is focussed in two steps. The second reflector handles a convergent cylindrical wave near the focus, and so can be made with its horizontal dimensions very small compared to those of the first reflector. The vertical dimension of the antenna is chosen to give optimal reception; the best height varies a little with α on account of the change in the distance from focus to reflector. The best length is $h_0 = 0.8h$. The periodically varying path differences, and the slots

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between the strips, cause widely separated weak interference lobes (similar to the principal maxima produced by a diffraction grating with a periodically varying refractive index); these reduce the efficiency of the surface, but do not affect the shape of the main lobe. The strips are set to the appropriate configuration in turn by displacement horizontally and by rotation about vertical and horizontal axes. Motion along the radius R of a circle that passes through the centres of the strips (when the object is in the zenith) is sufficient for the horizontal setting. The relative radial displacement of a strip seen at an azimuth Ω from the centre of the circle (Fig 2) is:

$$\delta = \frac{\Delta R}{R} = \frac{\cos\Omega\,(\sin^2\alpha - q)}{1 - \cos^2\alpha\cos^2\Omega} + \frac{\sqrt{\cos^2\Omega(\sin^2\alpha - q)^2 + (2q - \sin^2\alpha)(1 - \cos^2\alpha\cos^2\Omega)}}{1 - \cos^2\alpha\cos^2\Omega} - 1 \qquad (2)$$

Card 7/11 where $q = P/R$.

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It is essential for design reasons to minimize the radial displacements required. This may be done by choosing for each Ω the value of P for which the mean line of the surface differs least from a circle of radius R. The inclination β of a strip seen at an angle φ from the focus is given by:

$$\sin \beta = \sin \alpha / \sqrt{2(1 + \cos \varphi \cos \alpha)} \qquad (3)$$

The strip has to be rotated about its vertical axis through an angle $\Omega - \psi$ where ψ is given by:

$$\operatorname{tg} \psi = (1 - \delta) \sin \Omega / \sqrt{q^2 - (1 + \delta)^2 \sin^2 \Omega \sin^2 \alpha} \qquad (4)$$

A complete circle of strips makes it possible to turn the telescope to any azimuth. Automatic devices could provide rapid setting of the strips and automatic following of a source. This principle was in part used in the large GAO telescope built in 1956 (Fig 3). This telescope has at present 90 strips, each with $\ell = 1.5$ m and $h = 3$ m, which lie on an arc of a circle with $R = 100$ m. Each strip has means for moving it radially by 30 cm, and for turning it about its horizontal and vertical axes (Fig 4). P.D. Kalachev designed the strip systems. The strips

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are set manually from scales on the mechanisms, and from spirit levels. The zeros on the scales are checked (to correct for possible sinking in the foundations) by means of a system of fiduciary marks. V.D. Korotchenko and O.N. Shivris supervised the erection and adjustment. Two forms of antenna have been used, one as a segment of a paraboloid ('cheese'), and the other as a paraboloidal cylinder. The second of these (Fig 5) can be used over a range of centimetre and decimetre wavelengths. Each antenna is mounted on a rail system, and can be brought up to the focus. The antenna can be set at any height from 0 to 80°. The azimuth can be varied by ±40° from south (the number of strips is halved at the extreme positions). Tables for setting the strips have been drawn up on a computer. At 3 cm the widths to half power are 1.2', and 1° at small angles, and the coefficient of effective use for the reflector is about 30%. The angles were determined from the minimum widths of sun-spot records, and by a method developed by N.A. Yesepkina (Ref 2). The following new results emerged from examining the sun: a) the radio sources

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located on groups of sun-spots gave steady emissions during 2-3 rotations of the sun; b) the limiting sizes of these sources are about 1', the brightness temperatures are about 10^6 °K, and the heights are at 1.06 - 1.08 solar radii; the values are the same for 3 and 10 cm, Ref 3; c) powerful bursts occur at 3 cm; these are related to flashes in chromosphere, and have sizes of 1.5 to 2', temperatures of 10^8 °K or more, and heights of 1.1 solar radii (Ref 4). The radio telescope is fitted with sensitive receivers for wavelengths of 3.2 and 10 cm; discrete sources can be observed, as well as the sun. Observations on the Crab nebula at 3.2 cm gave results similar to those expected for this wavelength. G.P. Apushkinskiy, Yu.N. Pariyskiy and N.A. Bol'shakov designed the receivers; the first two studied the Crab nebula. A much larger telescope could be built on the same principle (the GAO one has an area of about 350 m2). The lengths of the strips are limited by the permissible error at λ_{min}, whereas the horizontal dimension is limited by the maximum permissible focal distance at λ_{max}. The useful range of wavelengths is thus

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limited by the size of the largest areas that are available. Thus, if the relative accuracy is to be 1 in 10^4, with λ_{min} = 3 cm and λ_{max} = 1 m, the area can be raised to $(1\div2)\times10^4$ m^2; with λ_{min} = 10 cm and λ_{max} = = 2 m the value becomes $(1\div2)\times10^5$ m^2.

Card 11/11

(slightly abridged translation).
There are 5 figures and 4 references, of which 3 are Soviet and 1 English.

ASSOCIATION: Glavnaya astronomicheskaya observatoriya AN SSSR
(Main Astronomical Observatory, Ac.Sc. USSR)

SUBMITTED: September 17, 1958

KHAYKIN, Semen Emmanuilovich; VINOGRADOVA, N.I.; MOLOTOV, A.A., Prinimal uchastiye BURLYAND, V.A., ZHEREBTSOV, I.P., red.; BEL'KIND, L.D., prof., red.; VORONIN, K.P., tekhn.red.

[Radio amateur's dictionary] Slovar' radioliubitelia. Izd.2., perer. i dop. Moskva, Gos.energ.izd-vo, 1960. 607 p. (Massovaia radiobiblioteka, nc.355). (MIRA 13:3)
(Radio--Dictionaries)

3,1710
9,1800

S/058/61/000/002/008/018
A001/A001

Translation from: Referativnyy zhurnal, Fizika, 1961, No. 2, p. 403, # 2Zh493

AUTHORS: Pariyskiy, Yu.N., Khaykin, S.E.

TITLE: On Demands Which Should be Made of Large Radiotelescopes From the Viewpoint of Radioastronomical Problems

PERIODICAL: "Izv. Gl. astron. observ. v Pulkove", 1960, Vol. 2, No. 5, pp. 27 - 44 (Engl. summary)

TEXT: The authors show expediency of using centimeter and decimeter wavelength bands in radioastronomical measurements. They discuss comparative characteristics of two types of antenna systems: systems with symmetric diagrams of directivity and asymmetric systems with diagrams highly extended in vertical direction. The authors present considerations as to the equivalence of these systems in resolving power and some other characteristics, if the larger dimension of the asymmetric antenna is equal to the diameter of the symmetric one. There are 16 references.

Translator's note: This is the full translation of the original Russian abstract.

Card 1/1

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E140/E435

9.1000

AUTHORS: Braude, B.V., Yesepkina, N.A., Kaydanovskiy, N.L. and Khaykin, S.E.

TITLE: The Effects of Random Errors on the Electrical Characteristics of Narrow-Beam Antennas with Variable-Profile Reflectors

PERIODICAL: Radiotekhnika i elektronika, 1960, Vol 5, Nr 4, pp 584-596 (USSR)

ABSTRACT: When a reflector antenna is constructed of individually adjustable plane elements the directional characteristics may be much better than those of a normal reflector antenna of rigid metal construction of equivalent aperture. The random and periodic errors of such construction are analysed. Certain of the conclusions of this analysis have been tested on the large radiotelescope of GAO AN SSSR (GAO Academy of Sciences USSR). While the 76 m paraboloid built in England permits work on a wavelength of 0.7 m (precision 10^{-3}), the radiotelescope of GAO has a precision of 4×10^{-5}, with invar-wire construction aligned by an ordinary theodolite. It is expected that this type of antenna on rocky ground

Card 1/2

87354

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A001/A001

9.1910

Translation from: Referativnyy zhurnal, Astronomiya i Geodeziya, 1960, No. 12, p. 48, # 12267

AUTHORS: Khaykin, S. E., Kaydanovskiy, N. L., Yesepkina, N. A., Shivris, O. N.

TITLE: The Great Pulkovo Radiotelescope

PERIODICAL: Izv. Gl. astron. observ. v Pulkove, 1960, Vol. 21, No. 5, pp. 3-26 (English summary)

TEXT: The authors describe the principle, design and results of investigation of the new mirror radiotelescope for centimeter wavelengths. The radiotelescope has the large surface of the reflector and is characterized by the high resolving power. Some astronomical results obtained by means of this instrument are presented. The reflector of the radiotelescope consists of a number of flat reflecting elements which form a polyhedral surface touching the surface of an elliptic cone. The reflector transforms the plane incident wave into a cylindrical one with a vertical axis. The cylindrical wave is transformed into a spherical one by the second mirror, a parabolic cylinder. The high relative precision of

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A001/A001

The Great Pulkovo Radiotelescope

the dismembered reflecting surface is achieved by the precise arrangement of its individual elements. The axis of the radiotelescope can be installed in any direction by displacements of reflecting elements and irradiator. Geometry of the reflecting surface, special features of the radiotelescope directivity diagram, and kinematics of mechanisms for the positioning of reflecting elements, are considered, and the measured characteristics of the radiotelescope are presented. There are 22 references.

From authors' summary

Translator's note: This is the full translation of the original Russian abstract.

Card 1/1

PARIYSKIY, Yu.N.; KHAYKIN, S.E.

Requirements to be met by large radio telescopes from the point of view of radio astronomy. Izv.GAO 21 no.5:27-44 '60. (MIRA 13:9)

(Telescope, Radio) (Radio astronomy)

KHAYKIN, S. E.

9.1911 (1127)

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S/109/61/006/012/001/020
D266/D305

AUTHORS: Yeropkina, N.A., Kaydanovskiy, N.L., Kuznetsov, B.G., Kuznetsova, G.V., and Khaykin, S.E.

TITLE: Investigating the radiation pattern of highly directive antennas whose reflecting surface is adjustable

PERIODICAL: Radiotekhnika i elektronika, v. 6, no. 12, 1961, 1947 - 1960

TEXT: The purpose of the paper is to derive mathematical expressions for the radiation pattern and for the effective area of a certain class of antennas. The antenna investigated consists of a large number of elements (rectangular metal plates of height h and width a) whose position and inclination are adjustable. The elements are in no mechanical contact with each other which facilitates greater accuracy of manufacturing. They can be adjusted in such a way that the main lobe of the vertical radiation pattern is in a specified direction (θ_0 in Fig. 1). This condition is satisfied if the radius vector of the center of the elements is given by the follow-

Card 1/4

Investigating the radiation pattern ...

ing formula

$$\rho = \frac{p}{1 + \cos\theta_0 \cos\varphi} = \frac{R_0 - a_0 \cos\theta_0}{1 + \cos\theta_0 \cos\varphi} \qquad (1)$$

where p - constant, φ - angle between the radius vector and the x axis (see Fig. 1). If $0 \leq \theta_0 < \pi/2$ (1) represents an ellipse, for $\theta_0 = 0$ a parabola, and for $\theta_0 = \pi/2$ a circle. It follows from (1) that the distance between the primary source and the reflector depends also on θ_0. The inclination of the metal plates is determined by the angles β and χ (see Fig. 1) which are related to θ_0 and as follows

$$\sin\beta = \frac{\sin\theta_0}{\sqrt{2(1 + \cos\theta_0 \cos\varphi)}} \qquad (3)$$

and

$$\tan\chi = \frac{\sin\varphi}{\cos\theta_0 + \cos\varphi} \qquad (4)$$

Card 2/4 3

in a plane perpendicular to the direction of the main lobe, the waves are in phase (this must be always the case because the antenna was designed according to this criterion) and the shape of the illuminated area in this plane is an incomplete ring. The distribution of the electric field (both polarizations are present) in the aperture is calculated by geometrical optics and the far field is obtained with the aid of wave optics. The arising integrals are integrated out leading to an infinite series of Bessel functions of the first kind. The radiation pattern is calculated for the reflector current as well. No analytical solutions are found in this case, but some numerical calculations indicate similar results to those obtained by the aperture method. Aperture efficiency is also determined and monotonically decreasing function of θ_0 is found. In conclusion the authors express their gratitude to V.S. Braude for his assistance. There are 15 figures and 9 references: 8 Soviet-bloc and 1 non-Soviet-bloc. The reference to the English-language publication reads as follows: S. Silver, Microwave Antenna Theory and Design, M.I.T. Rad. Lab. Series.

SUBMITTED: February 22, 1961

Card 3/4 3

KAYDANOVSKIY, Naum L'vovich; KHAYKIN, S.E., prof., nauchnyy red.; VOROB'YEV, G.S., red.izd-va; GURDZHIYEVA, A.M., tekhn. red.

[Unseen universe; essays on the achievements of radio astronomy] Nevidimaia Vselennaia; ocherki dostizhenii radioastronomii. Leningrad, Ob-vo po rasprostraneniiu polit. i nauchn. znanii RSFSR, 1962. 62 p. (MIRA 15:12)

(Radio astronomy)

KOROL'KOV, D.V.; PARIYSKIY, Yu.N.; TIMOFEYEVA, G.M.; KHAYKIN, S.E.

High-resolution radio-astronomical observations of Venus.
Dokl.AN SSSR 149 no.1:65-67 Mr '63. (MIRA 16:2)

1. Glavnaya astronomicheskaya observatoriya AN SSSR.
Predstavleno akademikom V.A.Kotel'nikovym.
(Radio astronomy) (Venus (Planet))

KHAYKIN, S.E., doktor fiz.-matem.nauk

High-resolution radio telescope. Vest. AN SSSR 34 no. 2: 29-32 F '64. (MIRA 17:5)

KHAYKIN, S.E.; PARIYSKIY, Yu.N.

Confusion effects and large radio telescopes. Izv. GAO 23 no.3: 87-103 '64. (MIRA 17:11)

YESEPKINA, N.A.; KUZNETSOV, B.G.; KHAYKIN, S.E.

Effect of fluctuations of the atmospheric refraction index on the characteristics of superlarge antennas. Izv. GAO 23 no.3: 155-159 '64. (MIRA 17:11)

KHAYKIN, Semen Emmanuilovich; YAKOVLEV, I.A., prof., retsenzent; BURLYAND, V.A., red.

[Electromagnetic oscillations and waves] Elektromagnitnye kolebaniia i volny. Izd.2., dop. i perer. Moskva, Energiia, 1964. 207 p. (Massovaia radiobiblioteka, no.562 p. (MIRA 19:1)

L 41092-66 EWT(1)/T/FBD GW/WS-2/WR

ACC NR: AP6027233 SOURCE CODE: UR/0109/66/011/008/1405/1412

AUTHOR: Yesepkina, N. A.; Kaydanovskiy, N. L.; Korol'kov, D. V.; Kuznetsov, B. G.; Khaykin, S. E.

ORG: none

TITLE: Effects of atmosphere on characteristics of small radio telescopes

SOURCE: Radiotekhnika i elektronika, v. 11, no. 8, 1966, 1405-1412

TOPIC TAGS: radio telescope antenna, radar antenna, ATMOSPHERIC PROPERTY, RADIO WAVE ABSORPTION

ABSTRACT: A study is conducted of atmospheric effects on the performance of a high-resolution radio telescope antenna with a variable profile. Factors influencing the antenna dimensions, such as wavefront phase distortions, existence of a gradient of index of refraction, and radio wave absorption in the ground layer of the atmosphere are considered. It is noted that phase distortion can be minimized if the average radius of curvature of the reflector is much greater than the height of irregularities in the atmosphere. By assuming a 10^{-4} relative accuracy of the antenna reflecting surface and mean atmospheric conditions, antenna gain was calculated for various azimuth angles. Nearly optimal performance conditions were found for the vertical dimensions of a reflector equal to $0.5 \times 10^3\lambda$, and horizontal dimensions of an antenna chosen to make the attenuation equal to 30%. With such a choice of

Card 1/2 UDC: [522.2:523.164]+621.371.24

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ACC NR: AP6027233

dimensions, the effective area of the antenna is 2×10^5, 1.3×10^4, 0.9×10^3 m^2 for λ = 10, 3 and 1 cm, respectively. Orig. art. has: 6 figures and 2 formulas.[IV]

SUB CODE: 09, 17/ SUBM DATE: 12Apr65/ ORIG REF: 012/ OTH REF: 003/ ATD PRESS: 5052

Card 2/2 hs

L 40973-66 FBD/EWT(1)/T GW/WS-2/WR
ACC NR: AP6027241 SOURCE CODE: UR/0109/66/011/008/1499/1503

AUTHOR: Braude, B. V.; Yesepkina, N. A.; Petrun'kin, V. Yu.; Khaykin, S. E.; Umetskiy, V. N.
ORG: none

TITLE: Application of methods for correction of the surfaces of optical telescopes to tuning of highly directional radio telescopes

SOURCE: Radiotekhnika i elektronika, v. 11, no. 8, 1966, 1499-1503

TOPIC TAGS: antenna, radio telescope antenna, antenna modulation, antenna tuning, radio telescope

ABSTRACT: A modified version of the so-called shadow method of tuning is proposed. The shadow method in its original form is used for correcting the surface of optical reflectors, but it does not assure the required accuracy and reliability when applied to large, highly directional radio telescopes. The modification consists of providing ways of producing converging waves near the antenna and of localizing errors on the mirror surface. The principles of localizing surface errors and of determining the shape of the reflecting antenna surface, based on the modulation of signals reflected from various sections of the antenna, are briefly described. In this

L 40973-66 APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721920008-2
ACC NR: AP6027241

procedure (see Fig. 1) the reflecting surface is made of comparatively small movable (adjustable) elements. One or more slightly directional modulated reradiators

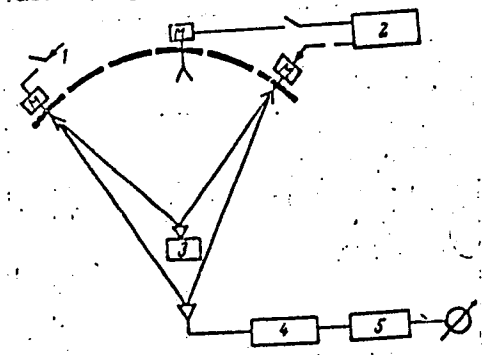

Fig. 1. Shadow method tuning arrangement

1 - From generation of Ω-frequency signals; 2 - Ω-frequency modulating generator; 3 - ω-frequency signal generator; 4 - detector; 5 - Ω-frequency signal amplifier.

(small dielectric or slot antennas with shf modulators) are mounted on each element. A generator is placed at one of the antenna focal points and a receiver with a detector and filter tuned to frequency Ω at the other. With such an arrangement, equal paths are obtained between the first and the second focal points. The modulated signal is produced by one of the reradiators, and a reference signal is produced by the sum field reflected from all of the antenna elements. Phase measurements with an accuracy of 0.5° at $\lambda = 3$ cm were made by the modulation method under laboratory conditions. In general, the tuning of a highly directional radio telescope should

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ACC NR: AP6027241

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proceed as follows: 1) the antenna is first focused for a short distance to obtai a converging wave front; 2) the reflector surface is then checked and corrected by the modulation method; 3) the antenna radiation pattern is checked by placing a generator at one focal point and measuring the field distribution near the other focal point. The distribution should coincide with the antenna radiation pattern in the far zone. When the measured antenna radiation pattern (field distribution near the focal point) is found to be in good agreement with the calculated one, the antenna should be focused to infinity, i. e., a plane wave should be obtained from the radio telescope. The operation of the system is then checked against cosmic radio sources having small (compared to the width of the radiation pattern) angular dimensions. Orig. art. has: 2 figures and 8 formulas. [JR]

SUB CODE: 17, 09 SUBM DATE: 18Dec65/ ORIG REF: 006/ OTH REF: 001/ ATD PRESS: 5058

Card 3/3 MLP

PA - 2412

AUTHOR: KHAYKIN,S.S.

TITLE: Designing of Efficient Ventilation Arrangements for Sintering Plants (Proyektirovaniye ratsional'nykh ventilyatsionnykh ustroystv aglofabrik, Russian).

PERIODICAL: Stal', 1957, Vol 17, Nr 3, pp 205 - 208 (U.S.S.R.)
Received: 5 / 1957 Reveiwed: 5 / 1957

ABSTRACT: The Khar'kov branch of the Glavsantekhmontazh investigated air conditions at working places for the production of sintering plants of the "Krivorozhstal'" and "Zaporozhstal'" works. A concentration of dust was found which by far exceeds the rate permitted by sanitary regulations. The air penetrating through gaps in the floor has a temperature of up to 50° and is contaminated by dust and carbon monoxide (of up to 0,03 mg/l). The air is sucked off with a velocity of from 0,2 to 3,3 m/sec and at an outer temperature of 20°, at some places from 26 to 47°, and contains from 0,015 to 0,055 mg/l carbon monoxide. The frequent air circulations (up to 120 circulations per hour) causes the workmen to catch colds. Although the computed air exchange for the absorption of heat surplus (337 kg/sec in one and 550 kg/sec in the other plant) is lower than actually found (400 and 644 kg/sec respectively), conditions are not satisfactory as air conditioning is not satisfactory and there is contamination. Recommendations for improving

Card 1/2

PA - 2412

Designing of Efficient Ventilation Arrangements for Sintering Plants.

prevailing conditions are given. Along the entire length of sinter bands metallic casings with detachable parts with heat insulation ought to be put up. Facilities for working must be provided. The idling device of the bands must be shut off entirely. The wacuum chambers, gas conductions, dust bags must be heat insulated. Air supply and air ventilation must be provided with suitable devices for cooling in summer and preheating in winter. For dust removal from battery cyclons a hydraulic shutter must be installated. (2 illustrations and 3 tables).

ASSOCIATION: Khar'kov Branch of Glavsantekhmontazh.
PRESENTED BY:
SUBMITTED:
AVAILABLE: Library of Congress.
Card 2/2

L 47326-66 EWT(m)/EWP(t)/EWP(t)/ETI IJP(c) JD/RM

KHAYKIN, V.

Applying mathematical methods in measuring the influence of labor indices on the reduction of industrial costs. Biul.nauch. inform.: trud i zar. plata 5 no.3:12-19 '62. (MIRA 15:3)
(Economics, Mathematical) (Costs, Industrial)

KHAYKIN, V.; SUKHAREV, Yu.; PETROV, Ye.; BEKKER, A., inzh. po tekhnike bezopasnosti; PODISTOV, N.; KOPYLOV, M., inzh.

Technical information. Okhr. truda i sots. strakh. 6 no.6: 34-41 Je '63. (MIRA 16:8)

1. Upravleniye legkoy promyshlennosti Soveta narodnogo khozyaystva Estonskoy SSR, Tallin (for Bekker).

KHAYKIN, V.

Calculating planned assignments on labor productivity with the aid of mathematical methods. Sots. trud 7 no.11:77-85 N '62. (MIRA 15:12)
(Machinery industry—Labor productivity) (Economics, Mathematical)

CHERNOV, A.; ARKHANGEL'SKIY, Yu.; GIMEYN, S., inzh (Moskva); KHAYKIN, V.; DASKOVSKIY, V.; DMITRIYEV, K.; YUDIN, G.; SHASHNIN, Yu.

Technological information. Okhr. truda i sots. strakh. 6 no.5:36-42 My '63. (MIRA 16:6)

1. Laboratoriya tekhniki bezopasnosti Gosudarstvennogo vsesoyuznogo nauchno-issledovatel'skogo tekhnologicheskogo institita remonta i ekspluatatsii mashinno-traktornogo parka (for Gimeyn).
(Technological innovations)

ARKHANGEL'SKIY, Yu.A., otv. za vypusk; ATABEKOV, L.P.; GUBIN, S.A.; KLEYKOV, V.S.; KOROTKOV, V.I.; KLYCHKOV, P.F.; LUTSKER, T.D.; LOBACHEV, V.M.; MEKKEL', M.A.; MANUSADZHYANTS, Zh.G.; SIVAKON', L.F.; KHAYKIN, V.A.; IOFFE, M.L., red.; NIKOLAYEVA, L.N., tekhn. red.

[Safety regulations for truck transportation enterprises] Pravila tekhniki bezopasnosti dlia predpriiatii avtomobil'nogo transporta. Moskva, Nauchno-tekhn. izd-vo M-va avtomobil'nogo transp. i shosseynykh dorog RSFSR, 1961. 71 p. (MIRA 14:7)

1. Profsoyuz rabotnikov sviazi, rabochikh avtomobil'nogo transporta i shosseynykh dorog. TSentral'nyy komitet. 2. TSentral'nyy komitet profsoyuza rabotnikov svyazi rabochikh avtomobil'nogo transporta i shosseynykh dorog (for Arkhangel'skiy). 3. Ministerstvo avtomobil'nogo transporta Kazakhskoi SSR (for Atabekov). 4. Ministerstvo avtomobil'nogo transporta i shosseynykh dorog RSFSR (for Gubin). 5. Moskovskiy avtomobil'no-dorozhnyy tekhnikum (for Kleykov, Korotkov). 6. Moszheldoravtopogruz (for Klychkov). 7. Ministerstvo avtomobil'nogo transporta i shosseynykh dorog USSR (for Lutsker). 8. Tekhnicheskaya inspektsiya Moskovskogo gorodskogo i oblastnogo sovetov profsoyuzov (for Lobachev, Mekkel'). 9. Laboratoriya okhrany truda Nauchno-issledovatel'skogo instituta avtomobil'nogo transporta (for Manusadzhyants). 10. Ministerstvo avtomobil'nogo transporta i shosseynykh dorog Latviyskoy SSR(for Sivakon'). 11. Glavnoye upravleniye gruzovogo avtotransporta Mosgorispolkoma (for Khaykin).

(Transportation, Automotive—Safety measures)

KHAYKIN, Viktor Abramovich; NIKITIN, A.G., red.; BODANOVA, A.P., tekhn. red.

[Manual for motor crane operators] Posobie mashinistu avtokrana. Moskva, Avtotransizdat, 1962. 175 p. (MIRA 15:7)
(Cranes, derricks, etc.)

KHAYKIN, Viktor Abramovich; NIKITIN, A.G., red.; GORYACHKINA, R.A., tekhn. red.

[Guide for the operator of truck mounted cranes] Pamiatka mashinistu avtokrana. Moskva, Avtotransizdat, 1962. 34 p. (MIRA 16:6)

(Cranes, derricks, etc.--Safety measures)

HAYKIN, Viktor Abramovich; YAKOVLEV, G.N., red.

[Safety manual for a sling operator] Pamiatka stropal'shchika po tekhnike bezopasnosti. Moskva, Transport, 1965. 46 p. (MIRA 18:8)

SHVARTS, Solomon Aronovich; KHAYKIN, V.P., otv. red.; LIBERMAN, S.S., red. izd-va; ANDREYEV, S.P., tekhn. red.

[Application of mathematical statistics to the analysis of coal-chemical production processes]Prilozhenie matematicheskoi statistiki k analizu protsessov koksokhimicheskogo proizvodstva. Khar'kov, Metallurgizdat, 1962. 212 p. (MIRA 15:8)

(Coke industry---By-products)
(Mathematical statistics)

KHAZKIN, Vladlen Pavlovich; NAYDENOV, Viktor Sergeyevich; GALUZA, Stanislav Grigor'yevich; LIBERMAN, Ye.G., doktor ekon. nauk, prof., red.; KONIKOV, L.A., red.; MISHNAYEVSKAYA, G.V., mlad. red.

[Correlation and statistical models in economic calculations] Korreliatsiia i statisticheskoe modelirovanie v ekonomicheskikh raschetakh. Moskva, Ekonomika, 1964. 215 p. (MIRA 17:9)

L'BERMAN, Ye.G., doktor ekonomicheskikh nauk, prof.; KHAYKIN, V.P.

Using mathematical (correlation) methods in planning effective operation of machinery plants. Vest.mashinostr. 42 no.11:67-72 N '62. (MIRA 15:11)
(Machinery industry--Production standards)
(Correlation (Statistics))

KHAYKIN, V.P.

Control of the biological activity of preparations according to predetermined absolute limits for an average effective dose. Farm.i toks. 24 no.6:748-753 N-D '61. (MIRA 15:11)

1. Khar'kovskiy nauchno-issledovatel'skiy khimiko-farmatsevticheskiy institut.

(PHARMACOLOGY)

KHAYKIN, V.Ya.

On the base of operating brickmaking plants. Stroi. mat. 11 no. 12:23 D '65. (MIRA 18:12)

1. Glavnyy inzhener Beskudnikovskogo keramicheskogo zavoda.

GAK, B.N., kand.tekhn. nauk; GERVIDS, I.A., kand. tekhn. nauk; GONCHAR, P.D., inzh.; VASIL'KOV, S.G., kand. tekhn. nauk; YEVNEVICH, A.V., kand. tekhn.nauk; KIPTENKO, A.K., inzh.; LUNDINA, M.G., kand. tekhn.nauk; NAUMOV, M.M., kand. tekhn. nauk; PATRIK, S.A., inzh.; POPOV, L.N., kand. tekhn. nauk; ROGOVOY, M.I., inzh.; SEDOV, V.G., inzh.; SOKOLOV, Yu.B., inzh.; FRANCHUK, K.O., inzh.; KHAYKIN, V.Ya., inzh., nauchnyy red.; CHIBUNOVSKIY, N.G., inzh., nauchnyy red.; NOKHRATYAN, K.A., red. [deceased]; GUZMAN, M.A., red.; GURVICH, E.A., red.; BOROVNEV, N.K., tekhr red.

[Handbook on the production of structural ceramics]Spravochnik po proizvodstvu stroitel'noi keramiki. Moskva, Gosstroiizdat. Vol.3.[Wall and roofing ceramics]Stenovaia i krovel'naia keramika. Pod red. M.M.Naumova i K.A.Nokhratiana. 1962. 699 p. (MIRA 16:1)

(Ceramics) (Building materials industry)

KHAYTIN, YA. N.

Crimea - Sheep

Growth of Tsigayskiy sheep breeding in the Crimea. Sots.zhiv., 15, no. 2, 1953.

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KHAYKIN, Yakov, Borisovich, sostavitel'; ORNATSKIY, N.V., professor, doktor tekhnicheskikh nauk, redaktor; CHVANOV, V.G., redaktor; GALAKTIONOVA, Ye.N., tekhnicheskiy redaktor

[Road builder's English-Russian dictionary] Anglo-russkii slovar' dorozhnika. Pod red. N.V.Ornatskogo. 16,000 terminov. Izd. 2-oe, dop. i ispr. Moskva, Nauchno-tekhn. izd-vo avtotransp. lit-ry, 1956. 319 p. (MLRA 10:1)
(English language--Dictionaries--Russian)
(Road construction--Dictionaries)

KURDENKOV, B.I., inzhener; KHAYKIN, Ya.B.

Gravel spreaders for road surface work. Avt.dor. 19 no.4:29-30 Ap '56. (MLRA 9:8)

(Great Britain--Road machinery)

KHAYKIN, Ya.B.; SKRAMTAYEV, B.G., prof., doktor tekhn.nauk, red.; KRUGLOV, S.A., red.izd-va; STEPANOVA, E.S., tekhn.red.; OSENKO, L.M., tekhn.red.

[English-Russian dictionary on cement and concrete] Anglo-russkii slovar' po tsementu i betonu. Pod red. B.G.Skramtaeva. Moskva, Gos.izd-vo lit-ry po stroit., arkhit. i stroit.materialam, 1959. 283 p. (MIRA 13:2)
(Cement--Dictionaries) (Concrete--Dictionaries)
(English langunge--Dictionaries--Ruddian)

KHAYKIN, Ya.L.

Improved ZhR-4 radio transmitter-receiver set. Avtom.telem.i sviaz' 3 no.10:37-39 O '59. (MIRA 13:2)

1. Starshiy inzhener-inspektor TSentral'noy selektsionnoy stantsii Ministerstva putey soobshcheniya.
(Radio)

KHAYKIN, Ya.L.

Antennas for ZhR-4 transmitter-receiver sets. Avtom.telem. i sviaz' 3 no.12:11-14 D '59. (MIRA 13:4)

1. Starshiy inzh.-inspektor TSentral'noy selektsionnoy stantsii.
(Antennas (Electronics))

KHAYKIN, Ya.L.

Radio communication with car distributers. Avtom., telem. i svias' 2 no.11:21-22 N '58. (MIRA 11:12)

1.Starshiy inzhener-inspektor TSentral'noy stantsii svyazi Ministerstva putey soobshcheniya.
(Railroads--Communication systems)

KORLAS, Ivan Ivanovich; SOKOLOV, Viktor Fedorovich; KHAYKIN, Yakov L'vovich; UPENDIK-UMANSKIY, G.M., inzh., retsenzent; NOVIKAS, M.N., inzh., red.; USENKO, L.A., tekhn.red.

[Concise manual for electricians and technicians of railroad radio communication systems] Kratkii spravochnik dlia elektromekhanikov i monterov poezdnoi i stantsionnoi radiosviazi. Moskva, Vses.izdatel'sko-poligr.ob"edinenie M-va putei soobshcheniia, 1961. 191 p. (MIRA 15:2)
(Railroads--Electronic equipment)
(Railroads--Handbooks, manuals, etc.)

DOBROVOL'SKIY, V.V., starshiy inzh.; KHAYKIN, Ya.L., starshiy inzh.-inspektor

Transmitter-receiver for car checkers. Avtom., telem.i sviaz' 6 no.5:7-12 My '62. (MIRA 15:4)

1. Otdel radiosvyazi Glavnogo upravleniya signalizatsii i svyazi Ministerstva putey soobshcheniya (for Dobrovol'skiy).
2. TSentral'naya stantsiya svyazi Ministerstva putey soobshcheniya (for Khaykin).
(Railroads--Communication systems)

MEREMSON, Yakov Leonidovich; STEPANOVA, Lyubov' Gerasimovna; KHAYKIN, Ya.L., inzh., retsenzent; NOVIKAS, M.N., inzh., red.; VOROTNIKOVA, L.F., tekhn. red

[Experience in operating the ZhR-4 transmitter-receiver] Opyt ekspluatatsii radiostantsii tipa ZhR-4. Moskva, Transzheldorizdat, 1962. 51 p. (MIRA 15:10)
(Radio) (Railroads--Communication systems)

RUBINOVICH, Lev Davydovich. Prinimal uchastiye KHAYKIN, Ya.K., inzh.; KOPERIN, V.V., nauchn. red.; ZHURAVLEV, B.A., red.izd-va; KASIMOV, D.Ya., tekhn. red.

[Assembly of the processing equipment in food enterprises; the meat and milk industry, refrigeration equipment] Montazh tekhnologicheskogo oborudovaniia pishchevykh predpriiatii; miaso-molochnaia promyshlennost', kholodil'nye ustanovki. Moskva, Gosstroiizdat, 1963. 315 p. (MIRA 16:8)
(Food industry--Equipment and supplies)

KHAYKIN, Ya.M., inzh.; PLAKHTIN, D.S.

Is it necessary to use reinforced concrete in fencing mine yards? Shakht. stroi. 4 no.3:27-28 Mr '60. (MIRA 13:11)

1. Stalingiproshakht.
(Hedges)

KHAYKIN, Ya.M., inzh.

Nomograms for determining cross sections of roadbeds. Transp. stroi. 10 no.7:48-49 Jl '60. (MIRA 13:7)
(Railroad engineering--Tables, calculations, etc.)
(Raod--Design)

KHAYKIN, Ye.

Urgent problems. Zhil.-kom. khoz. 12 no.5:15 My '62.
(MIRA 15:10)

1. Nachal'nik shilishchno-kommunal'nogo upravleniya, Nizhniy Tagil, Sverdlovskoy oblasti.

(Nizhniy Tagil—Apartment houses)

KHAYKIN, Ye. (g.Kuybyshev)

To the attention of the Committee of Inventions and Discoveries under the auspices of the Council of Ministers of the U.S.S.R. Izobr. i rats. no.9:41 S '59. (MIRA 13:1)
(Inventions)

KHAYKIN, Ye.

Features of time-division multiplexing in telegraphy.
Elektrosviaz' 16 no.5:69-71 My '62. (MIRA 15:5)
(Telegraph)

MIKHAL'KOVA, M.S.; KHAYKIN, Ye.A.

New fabrics manufactured in the cotton mills under Moscow Economic Council. Tekst.prom. 22 no.6:17-19 Je '62. (MIRA 16:5)

1. Starshiye inzhenery Upravleniya khlopchatobumazhnoy promyshlennosti Moskovskogo oblastnogo soveta narodnogo khozyaystva.
(Moscow Province--Cotton fabrics)

ACC NR: AT6029241 SOURCE CODE: UR/0000/66/000/000/0369/0375

AUTHOR: Khaykin, Ye. I.

ORG: none

TITLE: The application of the theory of sensitivity for simplifying a system of differential equations of a nuclear power plant

SOURCE: Vsesoyuznaya konferentsiya-seminar po teorii i metodam matematicheskogo modelirovaniya. 4th, Kiev, 1964. Vychislitel'naya tekhnika v upravlenii (Computer technology in control engineering); trudy konferentsii. Moscow, Izd-vo Nauka, 1966, 369-375

TOPIC TAGS: theory of sensitivity, nuclear power reactor, nuclear reactor control, error analysis, error prediction, sensitivity analysis, nonlinear differential equation

ABSTRACT: The kinetics of a nuclear reactor and the thermodynamics of a nuclear power plant are defined by a complex system of nonlinear differential equations. Since the modeling of such a system involves considerable difficulties, the attempt was made to approximate the initial system of equations by a simplified system, retaining the initial properties of the installation. Sensitivity equations were obtained by a differentiation of the difference equations of heat exchange and heat transfer of the nuclear power plant by q_k (where q_k is a parameter that influences the solution of the equations). Being linear, the constructed sensitivity equations were solved by a computer,

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S/142/62/005/001/012/012
E192/E382

AUTHOR: Khaykin, Ye.M.

TITLE: On the possibilities of time-division multiplex in multichannel communication links

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Radiotekhnika, v. 5, no. 1, 1962, 137 - 140

TEXT: Apart from the frequency-division multiplex and the normal time-division multiplex, there exists a method (Ref. 2 - F.C.P. Henroteau - Multiplex Communication System, US Patent Office, 1940, 2, 191, 565; Ref. 3 - L.A. Korobkov - Author's Certificate 71601, Byulleten' izobreteniy, 1949, no. 3) of applying time transformation to time-division multiplex. In this, the signals from n channels are recorded in memory devices over an interval t_o and then transmitted at an accelerated rate t_o/n. The recording in all the channels is done simultaneously, except that the instants of the start of recording for each channel are shifted by t_o/n, while the reproduction is performed successively. Accelerated reproduction

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On the possibilities of ....

of the signal results in its time transformation. One of the basic characteristics of the time-transformation multiplex is its immunity to transient (pulse) noise. This is particularly true of the system if it is provided with protection time intervals which amount to about 1% of the duration of a message. The system is also characterized by a high multiplexing efficiency and formation of the group signal directly from the time-transform individual signal messages. Its main disadvantage lies in the use of memory devices, so that it is more complicated than standard time-division multiplex equipment. Another disadvantage is due to the introduction of the signal delays at the transmitter and receiver. The time-transformation multiplex can be used in multichannel systems for transmitting various types of information provided a transmission delay of $t_o \gg 1/F_{max}$ can be tolerated (F_{max} is the highest frequency of the transmitted signal). There are 2 figures.

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KHAYKIN, Ye.M.

Features of time-division multiplexing in multichannel communication lines. Izv. vys. ucheb.; radiotekh. 5 no.1:137-140 Ja-F '62. (MIRA 15:5)

1. Rekomendovano kafedroy teoreticheskoy radiotekhniki Kuybyshevskogo elektrotekhnicheskogo instituta.
(Telecommunication)

KHAYKINA, A.B.

Attachment to screw-cutting lathes for drilling parallel holes in needle-carriers of multineedle stitching machines. Obm. tekh. opyt. [MLP] no.37:21-22 '57. (MIRA 12:9)
(Lathes--Attachments) (Shoe machinery)

KHAYKINA, A. B.

Attachment to screw-cutting lathes for cutting worms (part No. 4760) in Class 34 PMZ stitching machines. Obm. tekh. opyt. [MLP] no.37:25-26 '57. (MIRA 12:9)

(Lathes--Attachments) (Shoe machinery)

KHAYKINA, A.B.; ANISHCHENKO, N.I.

Apparatus for receiving wax in briquets. Obm. tekh. opyt. [MLP] no.37:26-28 '57. (MIRA 12:9)
(Shoe machinery)

KHAYKINA, A.B.

Machine for making chain saw plates. Obm. tekh. opyt. [MLP] no.37:28-30 '57. (MIRA 12:9)
(Shoe machinery)

PALANT, B.L.; MITEL'MAN, P.M.; KHAYKINA, A.S.; RACHINSKAYA, R.Z.; KHODOROVA, Z.N.; FINTIKTIKOVA, R.P.

Production of antipertussis sera, their purification and testing of the effectiveness of pertussis gamma globulin under clinical conditions. Nauch. osn. proizv. bakt. prep. 10:262-271 '61. (MIRA 18:7)

VOLOVICH, N.I.; GORDIYENKO, Ye.G.; KATS, F.M.; KURILOVA, M.A.; KHAYKINA, A.S.

Experimental production and study of complex natural and purified sera against rabies and tetanus [with summary in English]. Vop.virus. 3 no.1:23-27 Ja-F '58. (MIRA 11:4)

1. Khar'kovskiy institut imeni I.I.Mechnikova.
(RABIES, immunology,
exper. prod. of complex native & purified sera against rabies (Rus)
(TETANUS, immunology
exper. prod. of complex native & purified sera against tetanus (Rus)
(IMMUNE SERUMS,
exper. prod. of complex native & purified serums against rabies & tetanus (Rus)

KHAYKINA, A. S.; RACHINSKAYA, A. Z.; MITEL'MAN, P. M.; FINITIKIKOVA, G. P.

"Pertussis gamma-globulin from antigacterial and antitoxic horse sera."

Report submitted at the 13th All-Union Congress of Hygienists, Epidemiologists, and Infectionists. 1959

KHAYKINA, A.S.; DUBRAVINA, G.I.; RACHINSKAYA, A.Z.; PETRENKO, M.D.; MITEL'MAN, P.M.; KHODOROVA, Z.N.; KATS, F.M.; KISELEV, R.I.; GAYDAMAKA, M.G.; VOLOVICH, B.I.; BEKKER, M.L.; GORDIYENKO, Ye.G.; VYSOCHINENKO, Ye.K.; TELESHEVSKAYA, M.A.; NAYDEROVA, Yu.T.

Production of the active fraction of hyperimmune horse sera by means of the alcohol precipitation method under a low temperature. Nauch. osn. proizv. bakt. prep. 10:159-167 '61. (MIRA 18:7)

1. Khar'kovskiy institut vaktsin i syvorotok im. Mechnikova.

VOLOVICH, N.I.; GORDIYENKO, Ye.G.; KATS, F.M.; KURILOVA, M.A.; KHAYKINA, A.S.

Experimental study of native and purified complex sera against rabies and tetanus. Nauch. osn. proizv. bakt. prep. 10:244-251 '61. (MIRA 18:7)

1. Khar'kovskiy institut vaktsin i syvorotok im. Mechnikova.

AL'TOV, G.; KORNEYEV, S.G., red.; KHAYKINA, A., mauchn. red.;
POPOV, V.N., tekhn. red.

[Ten per cent adventures] Desiat' protsentov prikliuchenii.
Tambov, Tambovskoe knizhnoe izd-vo, 1962. 40 p. (Biblio-
techka novatora, no.3) (MIRA 16:10)
(Technological innovations)

TOLSTYKH, Nikolay Nikolayevich; FEYGIN, Matvey Petrovich; KORNEYEV, S.G., red.; KHAYKINA, A.Ye., nauchn. red.; POPOV, V.N., tekhn. red.

[Clayey string] Glinianyi shnur. Tambov, Tambovskoe knizhnoe izd-vo, 1962. 12 p. (Bibliotechka novatora, no.2) (MIRA 16:10)

(Building materials)

SERGEYEV, Sergey Vladimirovich; FROLOV, Viktor Grigor'yevich; KORNEYEV, S.G., red.; KHAYKINA, A.Ye., nauchn. red.; POPOV, V.N., tekhn. red.

[Virus of unreliability] Virus nenadezhnosti. Tambov, Tambovskoe knizhnoe izd-vo, 1962. 15 p. (Bibliotechka novatora, no.1) (MIRA 16:10)
(Machinery industry--Quality control)

BAKHTAMOV, Rafail Borisovich; KORCHAGIN, Boris Tikhonovich; KORNEYEV, S.G., red.; KHAYKINA, A.Ye., nauchn. red.; POPOV, V.N., tekhn. red.

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(Patents)

NEMOV, K.N.; SEMENOV, V.S.; KORNEYEV, S.G.; KHAYKINA, A.Ye., nauchn. red.; POPOV, V.N., tekhn. red.

[Find the logical way] Naiti razumnoe. Tambov, Tambovskoe knizhn. izd-vo, 1962. 16 p. (Bibliotechka novatora, no.6)
(MIRA 16:10)

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